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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,557	12/22/2000	Chaiwat Oottamakorn	9432-000129	3401

7590 01/26/2006  
Harness, Dickey & Pierce, P.L.C.  
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EXAMINER
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BARQADLE, YASIN M

ART UNIT	PAPER NUMBER
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2153

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/748,557	OOTTAMAKORN ET AL.	
	Examiner	Art Unit	
	Yasin M. Barqadle	2153	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 11-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 15-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**Continued Examination Under 37 CFR 1.114**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 17, 2005 has been entered.

**Response to Amendment**

2. The amendment filed on October 17, 2005 has been fully considered but are not persuasive in view of the new grounds of rejection.

- Claims 11-14 are canceled.
- Claims 15 and 16 are newly added.
- Claims 1-10 and 15-16 are presented for examination.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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3. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Examiner could not find in specification, the limitation of “wherein said first and second envelopes and said service curve are non-constant functions of a time interval variables,” in the applicant’s original specification.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitation of “wherein said first and second envelopes and said service curve are non-constant functions of a time interval variables”, because it attempts to claim the invention by excluding what the inventors did not invent rather than distinctly and particularly pointing out what they did invent. See *In re Schechter*, 205 F.2d 185, 98 USPQ 144 (CCPA 1953).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Liebeherr et al. ("Effective Envelopes: Statistical Bounds on Multiplexed Traffic in Packet Networks", hereinafter "Liebeherr").

In referring to claims 1 and 2, Park discloses an adaptive connection admission control method using traffic measurement and estimation. Park shows estimating the cell loss rate of the connections to the network and comparing them to a target cell loss rate. The system of Park does not explicitly show a first envelope associated with incoming traffic, a second envelope associated with current traffic, and a service curve associated with departing traffic. However, all three of these values are used in determining if a connection will be accepted. The cell loss rate is calculated by measuring the number of cells passing through the output link and by using the current connections.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of simplifying the system of Park so as to keep the sum of incoming traffic and current traffic lower than outgoing traffic, in order to guarantee quality of service and avoid creating a bottleneck.

Although Park shows substantial features of the claimed invention, he does not show said first and second effective envelopes are global effective envelopes. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Park as evidenced by Liebeherr.

In analogous art, Liebeherr discloses a statistical service that makes probabilistic service guarantees. Liebeherr shows said first and second envelopes are global effective envelopes: Liebeherr, page 1224, section II B shows an equation for a global effective envelopes, "*Global*

*effective envelopes ... are bounds for the arrivals in all subintervals ... of a larger interval [than local effective envelopes]*" (Liebeherr, page 1224, section II B)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the network of Park so as to use global effective envelopes, such as taught by Liebeherr, in order to *"exploit statistical multiplexing without assuming a specific source model."* (Liebeherr, page 1223, section I)

Park in view of Liebeherr, further teach as interpreted by the examiner where the first and second effective envelopes and said service curve are non-constant functions of a time interval variables "FIG. 2 is a block diagram for schematically showing an adaptive connection admission control system using traffic measurement and estimation according to an embodiment of the present invention. As shown in FIG. 2, the block diagram comprises users 10 which can request a connection set-up and a connection release, a measuring mechanism 40 for counting the number of cells passing through a switch 50 in the unit of a measuring interval and for measuring an average cell rate with respect to the entirety of the connections in the unit of an output link 60, an estimating mechanism 30 for estimating an average cell rate of individual connections with input of the entire average cell rate measured in measuring mechanism 40, and a connection admission control determining mechanism 20 for determining whether a connection is accepted or not with input of the average cell rate of individual connections obtained by estimating mechanism 30, a user-defined traffic parameter and the target cell loss rate." (Col. 2, lines 35-55 which shows that Park does not show a constant function of time interval)

In referring to claim 3, Park in view of Liebeherr shows,

- Said second effective envelope is a global effective envelope determined as a function of the measured average and variance of an aggregate of admitted traffic:

Liebeherr, page 1224, section II B shows an equation for a global effective envelopes in which the global effective envelope is a function of the measured average and variance of the aggregate traffic

In referring to claim 4, although Park shows substantial features of the claimed invention, including the network of claim 1 (see 102 rejection above), Park does not show said first and second effective envelopes are global effective envelopes. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Park as evidenced by Liebeherr.

In analogous art, Liebeherr discloses a statistical service that makes probabilistic service guarantees. Liebeherr shows said first and second envelopes are global effective envelopes: Liebeherr, page 1224, section II B shows an equation for a local effective envelopes, *"A local effective envelope provides a bound for the aggregate arrivals ... for any specific ('local') time interval ..."* (Liebeherr, page 1224, section II B)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the network of Park so as to use local effective envelopes, such as taught by Liebeherr, in order to *"exploit statistical multiplexing without assuming a specific source model."* (Liebeherr, page 1223, section I)

In referring to claim 5, Park in view of Liebeherr shows,

- Said second effective envelope is a local effective envelope determined as a function of the measured average and variance of an aggregate of admitted traffic:

Liebeherr, page 1224, section II B shows an equation for a local effective envelopes in which the local effective envelope is a function of the measured average and variance of the aggregate traffic

In referring to claim 6, Park in view of Liebeherr shows,

- Said first effective envelope is based on an aggregate of arriving traffic:

Liebeherr, page 1224, section II B shows an equation for a local effective envelopes, “*A local effective envelope provides a bound for the aggregate arrivals ... for any specific ('local') time interval ...*” (Liebeherr, page 1224, section II B)

In referring to claim 7, Park in view of Liebeherr shows,

- Said aggregate is determined by measuring an aggregate arrival flow at plural time intervals and by calculating the average and variance of said aggregate arrival flow

Liebeherr, page 1224, section II B shows an equation for a global effective envelopes, “*Global effective envelopes ... are bounds for the arrivals in all subintervals ... of a larger interval [than local effective envelopes]*” (Liebeherr, page 1224, section II B)

In referring to claim 8, Park in view of Liebeherr shows,

- Said second effective envelope is recursively calculated:

Liebeherr, page 1224, section II B shows, “there exists a smallest local effective envelope, since the minimum of the two local effective envelopes is again such an envelope”, and can therefore be calculated recursively

In referring to claim 15, Park teaches testing an admission control for each of plurality of service classes, wherein an aggregate effective envelope associated with arriving and a service curve are determined for each of said plurality of services (see fig. 3; col. 2, lines 35-67 and col. 3, lines 59 to col. 4, line 18).

In referring to claim 15, Park teaches where said admitting said arriving traffic includes admitting said arriving traffic when said admission control condition satisfied for each of said plurality of service classes (col. 2, lines 35-67 and col. 3, lines 59 to col. 4, line 18).



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6. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Cruz et al. ("Scheduling for Quality of Service Guarantees via Service Curves", hereinafter "Cruz"). Although Park shows substantial features of the claimed invention, Park does not show said service curve is determined by developing a list of pairs representing the amount of time required to service one packet of information (packet delay) and the number of backlogged packets of information and using said list to determine a bounded service envelope. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Park as evidenced by Cruz.

In analogous art, Cruz discloses using service curves for quality of service guarantees. Cruz shows said service curve is determined by developing a list of pairs representing the amount of time required to service one packet of information and the number of backlogged packets of information and using said list to determine a bounded service envelope: Cruz, Page 513, column 2, Definition 1 shows there exists a service curve based on the backlog and the time it takes to service a packet.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the network of Park so as to use a service curve based on the backlog and time it takes to service a packet (packet delay), such as taught by Cruz, in order to "efficiently allocate limited network resources to many connections by promoting sharing while also providing quality of service for each connection" (Cruz, page 512, section 1).

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### **Conclusion**

The prior made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yasin Barqadle whose telephone number is 571-272-3947. The examiner can normally be reached on 9:00 AM to 5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on 571-272-3949. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or public PAIR system. Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YB

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JASON CARDONE  
SUPERVISORY PATENT EXAMINER